

Measurement of lime/silica ratio in concrete using PGNAA technique

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Abstract: Prompt gamma neutron activation analysis (PGNAA) technique has been used to determine lime/silica ratio in concrete samples using an accelerator-based PGNAA facility. The ratio was determined from the measured yield of 6.42 MeV prompt ^3X -rays of calcium and 4.93 MeV ^3X -rays of silicon from the six concrete samples. The experimental results were compared with the results of the Monte Carlo simulations. An excellent agreement has been achieved between the two. The study has demonstrated successful use of the accelerator-based PGNAA setup in non-destructive analysis of the concrete samples. 2005 © Elsevier B.V. All rights reserved.